

§Appl. No. 10/764,584
Amdt. dated April 19, 2007
Reply to Office Action of, January 19, 2007

REMARKS

Claims 1-20 remain in this application for examination.

Claim Objections:

In claim 10, the term "stream" has been corrected to read "steam".

Claim Rejections Under 37 C.F.R. §103:

Claims 1-9 and 11-19 have been rejected under 37 C.F.R. §103(a) as being unpatentable over Hallee '121 in view of Kendall '762, while claim 10 has been rejected as unpatentable over Hallee '121 in view of Kendall '762 and further in view of Gargominy et al. '135. Applicants respectfully traverse these rejections.

Both the primary reference, Hallee '121, and the secondary reference, Kendall '762, are assigned to the Industrial Property Division of Institut Francais du Petrole and both claim inventions made by employees of same. Considering first the primary reference, Hallee '121, the Office Action states that Hallee '121 does not disclose that the burners therein are catalytic burners with porous panels having a ratio R of the cumulative surface of the porous panels to the cumulative surface of the radiant walls of at least equal to 0.3. The Examiner attempts to cure these defects in Hallee '121 with the disclosure of Kendall '762. However, as is readily seen in Figs. 2, 3 and 4 of Kendall, the porous fiber burner surface of the Kendall burners is a flattened fiber surfaces (56). This is evident from Fig. 4 and from column 2, line 41 of Kendall. The flattened fiber surface (56) extends horizontally and deeply inside of the furnace box to the middle of the furnace box of Kendall, as is seen in Fig. 3 and in Fig. 2, and as explained in column 2, lines 20-24. Thus, it is readily apparent that the Kendall burners are not using radiant walls but only fibrous burner surfaces protruding and extending deeply inside the furnace box and extending perpendicular to the radiant walls, i.e. the walls supporting the burners.

Moreover, in the system of Kendall '762, the R ratio is not defined because there is no whole surface radiant wall for determining the ratio R. Although the burner radiant surface of Kendall appears high, there is no technical teaching whatsoever in Kendall concerning a ratio between burner surface and radiant wall surface. This is because there is no whole radiant wall emitting surface in Kendall due to the geometry of Kendall's heater and the geometry of his burner/coils arrangement. Clearly, in Kendall, there can be no teaching of using a high burner/radiant wall ratio such as R because Kendall has no whole surface radiant wall similar to the typical industrial installation shown in Applicants' Fig. 1. Contrary to the teachings of Randall '762, Applicants' burner/heat arrangement utilizes whole surface radiant walls configured of direct emitting porous panel surfaces plus wall reflecting radiant surfaces. Thus, in Applicants' claimed invention, the ratio R has meaning and support, whereas in Randall '762 such a ratio is not disclosed and is therefore clearly not considered.

With respect to claim 10 which was rejected as unpatentable over Hallee '121 in view of Kendall '762 and further in view of Gargominy et al. '135, whatever Gargominy teaches, Gargominy does not cure the deficiencies of the Hallee-Randall combination. Accordingly, claim 10 is patentable for the same reasons as claim 1 from which claim 10 depends.

To further clarify the differences between Applicants' claimed invention and the prior art, Applicants have amended claim 1 to recite that the radiation chamber is parallelepipedic with two opposite radiant walls supporting catalytic radiant burners, each comprising parallelepipedic panels having one face along one radiant wall and another face formed by a porous panel parallel to said one radiant wall and emitting heat toward the bundle. Support in Applicants' specification for this recitation in claim 1 occurs at page 9, line 22 - page 10, line 3 and at page 12, lines 11-13 and 16-18, as well as in the drawings of Figs. 2 and 3. This structure is not present in either Hallee '121 or Kendall '762 and provides further support to Applicants' position that the prior art does not teach using a high burner/wall surface ratio R in the presence of a full radiant wall.

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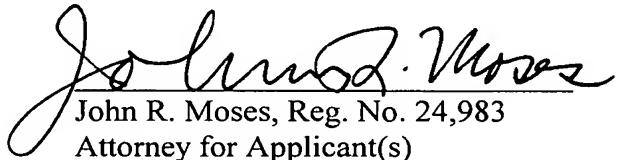
New claim 20 recites the R ratio in the range of 0.7 to 0.95 as disclosed on page 13, line 2. It specifies the case where there is one part of the radiant wall that is not constituted by fiber panels, but is a heat reflecting or re-emitting surface, as is the case in Fig. 3 at reference numeral 22.

In that the references do not establish a *prima facie* case of obviousness as required by 35 U.S.C. §103, it is respectfully submitted that this application is now in condition for allowance and requests that this application now be allowed and passed to issue.

If the Examiner feels that a personal conference with Applicant's attorneys might expedite prosecution of this application, the Examiner is requested to telephone the undersigned locally.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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